

MITCHELL COUNTY CREP WETLAND PROJECT

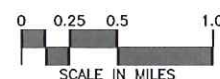
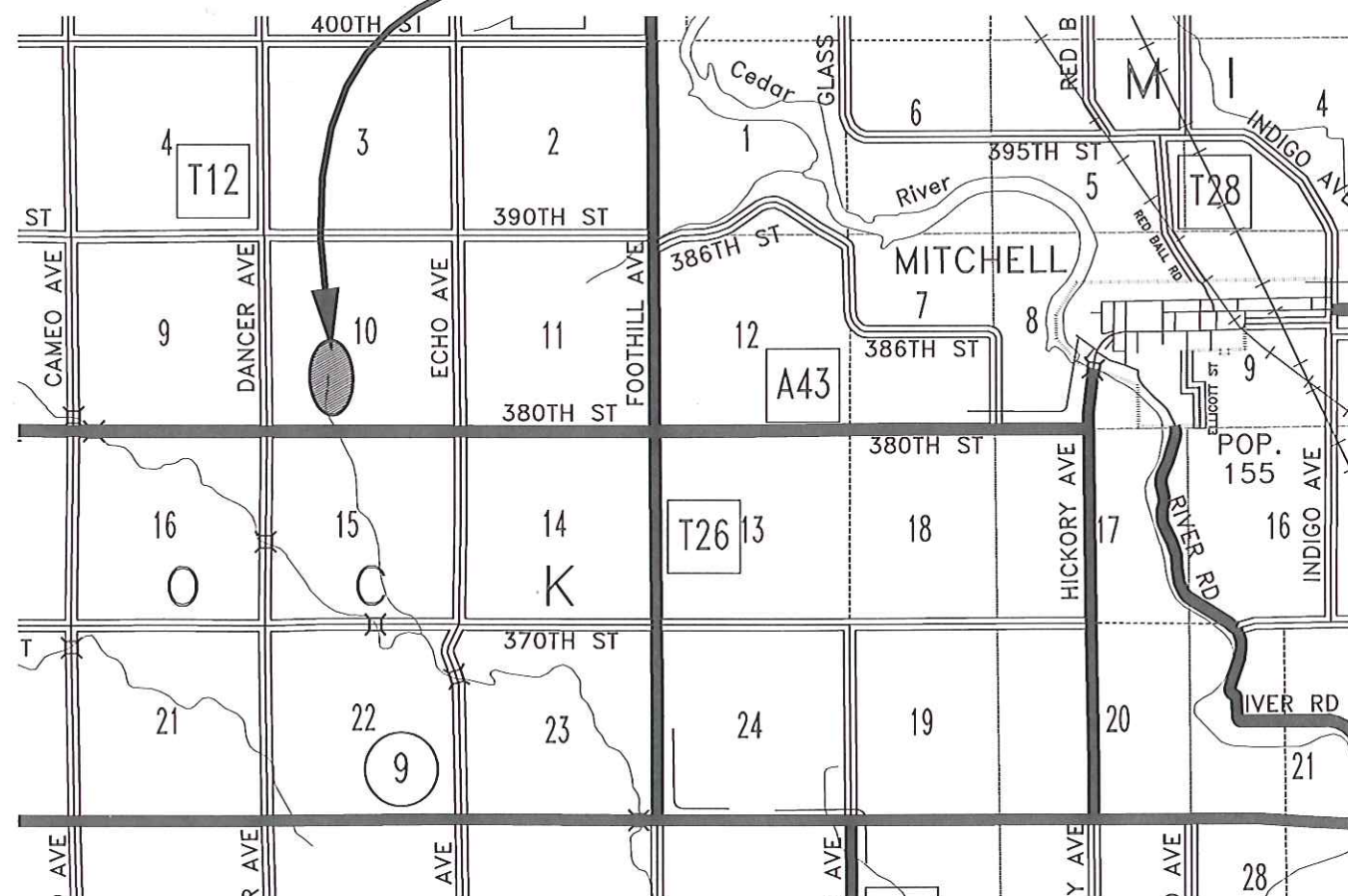
SITE Mit981810C

MITCHELL COUNTY, IOWA



PHONE: (641) 424-6344
215 N. ADAMS AVE.
MASON CITY, IA 50401

PROJECT LOCATION



SITE LOCATION MAP

SECTION 10, T-98-N, R-18-W
MITCHELL COUNTY, IOWA

PREPARED FOR:

IOWA DEPARTMENT OF AGRICULTURE AND LAND STEWARDSHIP
HENRY A. WALLACE BUILDING
DES MOINES, IOWA 50319

HORIZONTAL CONTROL

SEE INDIVIDUAL SHEETS

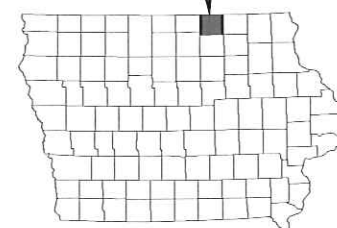
VERTICAL CONTROL

THE ELEVATIONS ON THIS PLAN ARE BASED ON THE NORTH
AMERICAN VERTICAL DATUM OF 1988 (NAVD).

CIVIL ENGINEERS / SURVEYORS

SEH Yaggy
215 NORTH ADAMS
MASON CITY, IOWA 50401
PHONE NO. (641) 424-6344
FAX NO. (641) 424-0351

MITCHELL COUNTY



SHEET INDEX

C.01	TITLE SHEET
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C.07	DETAILS

PRINTED

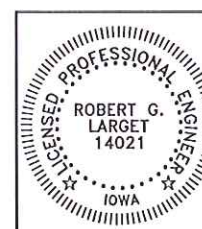
DEC 29 2014

SEH - Mason City, IA

OFFICIAL COPY

BENCH MARKS

1. CONTROL PT. 601	EL. 1236.51
2. CONTROL PT. 602	EL. 1202.72
3. CONTROL PT. 608	EL. 1177.18
4. CONTROL PT. 609	EL. 1192.47



I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa.
Robert G. Larget Date 12/29/14
License number 14021
My License renewal date is December 31, 2016
Pages or sheets covered by this seal: All sheets

MITCHELL COUNTY CREP WETLAND PROJECT

SITE Mit981810C

MITCHELL COUNTY, IOWA

TITLE SHEET

PROJECT NUMBER	12114
COMPUTER FILE	12114C01.DWG
DATE	05/15/1014
DRAWN BY	AH
CHECKED BY	RGL
REVISIONS	
#1	12-22-14

SHEET NUMBER

C.01

OF 7 SHEETS

STANDARD ABBREVIATIONS

A	ANGLE CENTRAL ANGLE AT ACRES A.C.C. AREA DRAIN ADD. ADJ. ADJUSTABLE/ADJACENT AGG. ALT. ACCESS PANEL A.P.P.S. ALTERNATE PIPE SEWER APPROX. ARCH. ARCHITECT/ARCHITECTURAL ASPH. AVE. AVG. AZ.	B	BACK OF CURB TO BACK OF CURB B/C BIT. BLDG. BLVD. B.M. B.O. BOT. BRG. B.S. BSMT. BTWN. B.V.	C	CENTER TO CENTER C.A.G. CATV C.B. CH. CHAZ. C.I.M. C.I.P. C.I.S.P. C.J. C/L CLR. CLR&GRB. C.M.P. C.O. CO. COMP. CONF. CONC. CONN. CONST. CONT. COORD. CORP. CORNER CORR. C.P.P. C.R. C.S.A.H. C.S.P. CTR. CU. CULT. CULV. C.W. C.Y.	D	DOUBLE DRAINAGE EASEMENT DECID. DEPT. DET. DIA. DIA. DIA. DIA. D.I.P. DISP. D.L. DN. D.O. DOOR D.S.P. DWG.	E	EAST E.L.Y. EA. E.J. EL. ELEC. ENG. ENTR. E.P. EQ. EQUIP. E.R. EST. EST. E.T.R. EXC. EXP.	F	FURNISH & INSTALL F.M. F.D. F.F.E. F.I.C. F.I.O. F.I.T. F.O.C. F.O.V. F.T.I.C.	G	GENERAL CONTRACTOR G/L GRD. GR. G.V.	H	HANDICAP HDR. HLL HORIZ. H.P.T. HR. HT. HWY. HYD.	I	INSIDE DIAMETER/INSIDE DIMENSION I.E. IMPROVEMENTS IN. INFO. INLET INSP. INST. INSUL. INT. INT. I.P.	J	JUNCTION BOX JT. L. LB. L.C. L.DSC. L.F. L.H. L.L. L.N. L.P.T. L.P. LT.	M	MACHINE MAINT. MAT. MAX. M.C. MECH. MEMB. MFR. M.H. MIN. MISC. MOD. MON.	N	NORTH N.A. N.E. N.E.L.Y. N.E.L.Y. N.W.L.Y. N.W.L.Y. N.O. N.T.S.	O	OVERALL O.C. O.D. O.E. O.F.D. OFF. OPNG. OPP. OUTL. OZ.	P	POWER P.C. P.C. P.C.C. P.E. P.E.D. PERF. PERP. PH. P.I. P.L. P.N.L. P.N.T. P.O.B. P.O.T. P.P. P.R.C. PREFAB. PROP. P.S.F. P.S.I. PT. P.V. P.V.C. P.V.I. P.V.M.T.	Q	QUARTER	R	RADIUS/RANGE R.C.B. R.C.P. R.O. RD. REBAR RECEP. RECEP. RECT. REF. REG. REINFORCED REQ. RET. REV. R.O.W. R.P. RAILROAD R.A.R. R.S. RT.	S	SOUTH S.A. SEALCOAT SEALANT SEALER SPEC. SQ. ST. STATION ST.A. STD. STL. ST.S. STYL. STOR. STRUCT. SURF. SWLY. SWK. SY. SYM. SYMM.	T	TOWNSHIP T.A.B. TAN. T/B T.B.V. T.C. T.E. TEL. TEMP. T.H. T.O.C. T.O.B. T.O.D. T.O.F. T.O.F.M.T. T.O.W. T.P. T/S TYP.	U	UNIFORM BUILDING CODE U.A.C. USE AS CONSTRUCTED UTILITY EASEMENT UE UNDERGROUND ELECTRIC UG UNDERWRITERS LABORATORIES, INC. U.N.O. UNLESS NOTED OTHERWISE UNDERGROUND PIPELINE UT UTILITY UNDERGROUND TELEVISION CABLE	V	VARIABLE V.C. V.C.P. V.C.T. VERT. VOL. V.P.C. V.P.T.	W	WEST W.A. W.L.Y. W/O W/ WAT. WD. W.D.W. W.M. W.S.O. WT. W.V. W.W.F. W.W.M. W.Y.	X	X-SECT.	Y	YD. Y.C.A.
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GRAPHIC SYMBOLS

	CENTER LINE		EASEMENT LINE		RIGHT OF WAY LINE, PROPERTY LINE		QUARTER SECTION LINE		SECTION LINE		SIXTEENTH SECTION LINE		BARBED WIRE FENCE		CHAIN-LINK FENCE		WOODEN FENCE		TREE LINE		1/2" REBARS		3/4" IRON PIPES		FOUND MONUMENTS (PIPE, ROD, ETC.)		SECTION CORNER MARKER		QUARTER SECTION MARKER		PROPOSED WATER MAIN, MANHOLE, TEE, GATE VALVE, HYDRANT, REDUCER, SERVICE LINE AND WATER SHUT OFF		EXISTING WATER MAIN, MANHOLE, GATE VALVE AND HYDRANT		EXISTING WATER SHUT OFF		PROPOSED SANITARY LINE, MANHOLE AND SERVICE LINE		EXISTING SANITARY MANHOLE AND LINE		PROPOSED STORM SEWER LINE, MANHOLE AND CATCH BASIN OR INTAKE		EXISTING STORM SEWER MANHOLE, LINE AND CATCH BASIN OR INTAKE		EXISTING CATCH BASIN OR INTAKE		EXISTING UNDERGROUND GAS LINE, VALVE AND METER		EXISTING UNDERGROUND TELEPHONE MANHOLE, LINE AND PEDESTAL		EXISTING UNDERGROUND ELECTRIC MANHOLE, LINE AND TRANSFORMER		EXISTING UNDERGROUND TELEVISION LINE AND PEDESTAL		EXISTING FIBER OPTIC LINE		REMOVAL LIMITS
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GENERAL NOTES

- ALL WORK SHALL CONFORM TO AND BE PERFORMED IN ACCORDANCE WITH ALL APPLICABLE CODES AND ORDINANCES.
- THE SPECIFICATIONS AS PREPARED BY IOWA DEPARTMENT OF AGRICULTURE AND YAGGY COLBY ASSOCIATES SHALL BE CONSIDERED A PART OF THESE DOCUMENTS AS IF BOUND HEREIN. NATURAL RESOURCES CONSERVATION SERVICE CONSTRUCTION SPECIFICATIONS SHALL APPLY.
- THE CONTRACTOR SHALL NOTIFY ALL APPROPRIATE ENGINEERING DEPARTMENTS AND UTILITY COMPANIES 72 HOURS PRIOR TO CONSTRUCTION. ALL NECESSARY PRECAUTIONS SHALL BE TAKEN TO AVOID DAMAGE TO ANY EXISTING UTILITY.
- THE LOCATION OF EXISTING UNDERGROUND UTILITIES AND ROCK ELEVATIONS ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES AND ROCK ELEVATIONS BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES AND ROCK ELEVATIONS.
- THE CONTRACTOR SHALL VISIT THE SITE AND INSPECT THE PROJECT AREA AND THOROUGHLY FAMILIARIZE HIMSELF WITH THE ACTUAL JOB CONDITIONS PRIOR TO BIDDING AND THE START OF ANY WORK. FAILURE TO VISIT THE SITE SHALL NOT RELIEVE THE CONTRACTOR FROM PERFORMING THE WORK IN ACCORDANCE WITH THESE DRAWINGS.
- THE CONTRACTOR SHALL VERIFY AT THE SITE, ALL DIMENSIONS AND CONDITIONS SHOWN ON THE DRAWINGS, AND SHALL NOTIFY THE ENGINEER OF ANY DISCREPANCIES, OMISSIONS, AND/OR CONFLICTS PRIOR TO PROCEEDING WITH THE WORK.
- THE CONTRACTOR SHALL NOT SCALE DRAWINGS. DIMENSIONS SHALL GOVERN. LARGE SCALE DRAWINGS SHALL GOVERN OVER SMALL SCALE DRAWINGS. NOTES AND DETAILS ON THE DRAWINGS SHALL APPLY TO ALL SIMILAR CONDITIONS WHETHER THEY ARE REPEATED OR NOT.

TYPICAL HATCH PATTERNS

	GRADED RIP RAP		POOL EXCAVATION
	DEEP WATER AREA		LAYDOWN AREA
	PERMANENT POOL AREA		



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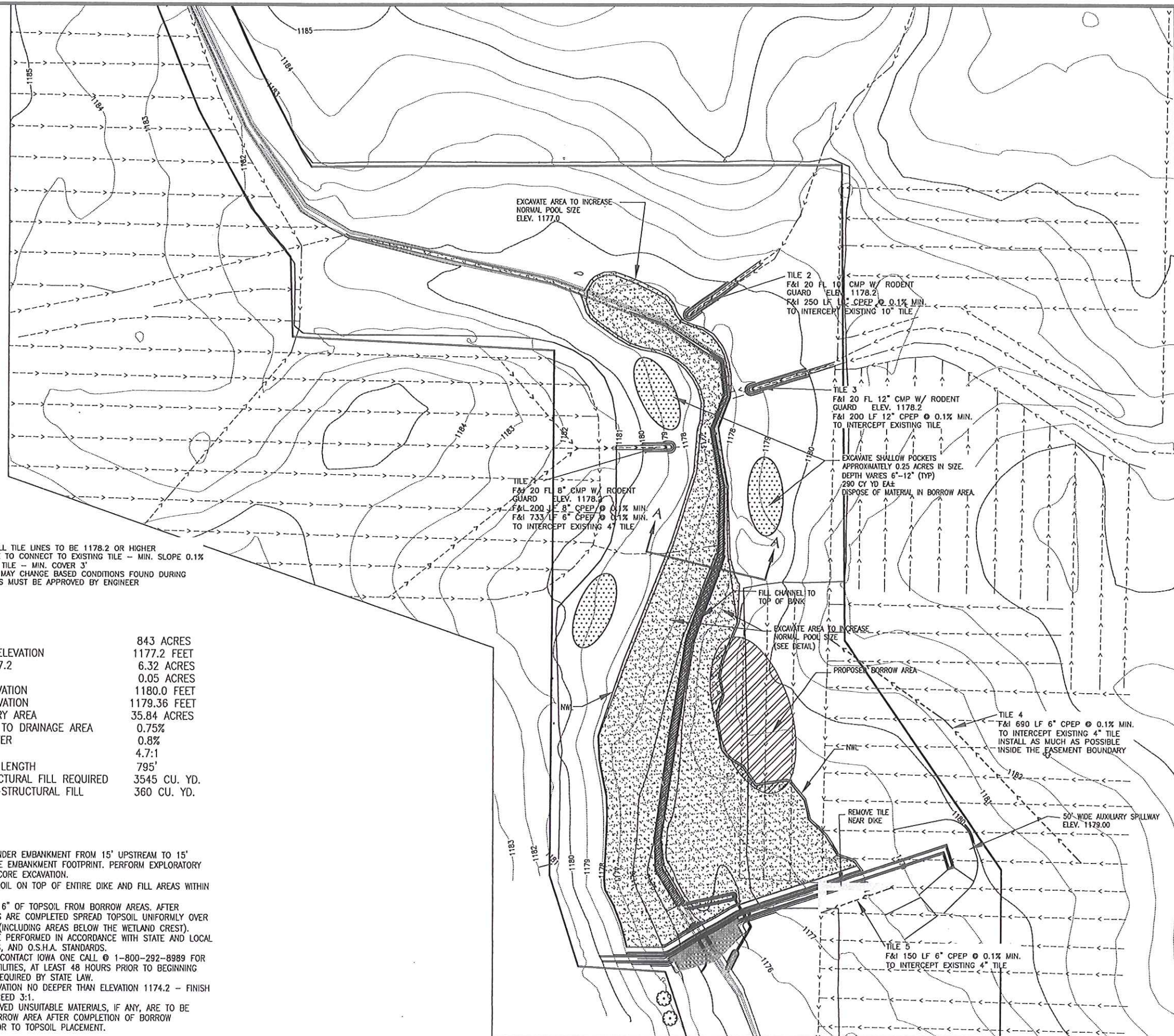
SITE M1981810C

MITCHELL COUNTY, IOWA

GENERAL INFORMATION SHEET

PROJECT NUMBER	12114
COMPUTER FILE	12114C02.DWG
DATE	05/15/2014
DRAWN BY	ALH
CHECKED BY	RGL
REVISIONS	
#1	12-22-14

SHEET NUMBER
C.02
OF 7 SHEETS



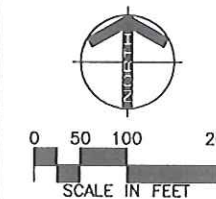
NOTES:
OUTLET ELEVATION OF ALL TILE LINES TO BE 1178.2 OR HIGHER
F & I APPROPRIATE TILE TO CONNECT TO EXISTING TILE - MIN. SLOPE 0.1%
FILL OVER TOP OF NEW TILE - MIN. COVER 3"
ACTUAL TILE LOCATIONS MAY CHANGE BASED ON CONDITIONS FOUND DURING INSTALLATION - CHANGES MUST BE APPROVED BY ENGINEER

GENERAL NOTES:

DRAINAGE AREA	843 ACRES
PERMANENT POOL ELEVATION	1177.2 FEET
POOL AREA @ 1177.2	6.32 ACRES
DEEP WATER AREA	0.05 ACRES
TOP OF BERM ELEVATION	1180.0 FEET
100 YR EVENT ELEVATION	1179.36 FEET
EASEMENT BOUNDARY AREA	35.84 ACRES
PERCENT OF POOL TO DRAINAGE AREA	0.75%
PERCENT DEEP WATER	0.8%
BUFFER RATIO	4.7:1
APPROXIMATE DIKE LENGTH	795'
APPROXIMATE STRUCTURAL FILL REQUIRED	3545 CU. YD.
APPROXIMATE NON-STRUCTURAL FILL	360 CU. YD.

CONSTRUCTION NOTES:

1. REMOVE ALL TILE UNDER EMBANKMENT FROM 15' UPSTREAM TO 15' DOWNSTREAM OF THE EMBANKMENT FOOTPRINT. PERFORM EXPLORATORY EXCAVATION WITHIN CORE EXCAVATION.
2. SPREAD 6" OF TOPSOIL ON TOP OF ENTIRE DIKE AND FILL AREAS WITHIN POOL.
3. STRIP AND SALVAGE 6" OF TOPSOIL FROM BORROW AREAS. AFTER BORROW OPERATIONS ARE COMPLETED SPREAD TOPSOIL UNIFORMLY OVER THE BORROW AREA (INCLUDING AREAS BELOW THE WETLAND CREST).
4. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH STATE AND LOCAL REGULATIONS, CODES, AND O.S.H.A. STANDARDS.
5. CONTRACTOR SHALL CONTACT IOWA ONE CALL @ 1-800-292-8989 FOR LOCATION OF ALL UTILITIES, AT LEAST 48 HOURS PRIOR TO BEGINNING CONSTRUCTION AS REQUIRED BY STATE LAW.
6. BORROW AREA EXCAVATION NO DEEPER THAN ELEVATION 1174.2 - FINISH SLOPES NOT TO EXCEED 3:1.
7. STRIPPED AND REMOVED UNSUITABLE MATERIALS, IF ANY, ARE TO BE DISPOSED OF IN BORROW AREA AFTER COMPLETION OF BORROW OPERATION AND PRIOR TO TOPSOIL PLACEMENT.



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MITCHELL COUNTY CREP WETLAND SITE

SITE Mit981810C

SITE PLAN

PROJECT NUMBER	12114
COMPUTER FILE	12114dsur.dwg
DATE	05/20/14
DRAWN BY	ALH
CHECKED BY	RGL
REVISIONS	
#1	12-22-14

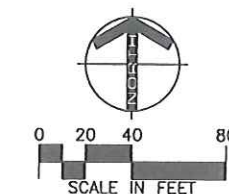
SHEET NUMBER

C.03

OF 7 SHEETS

CONSTRUCTION NOTES:

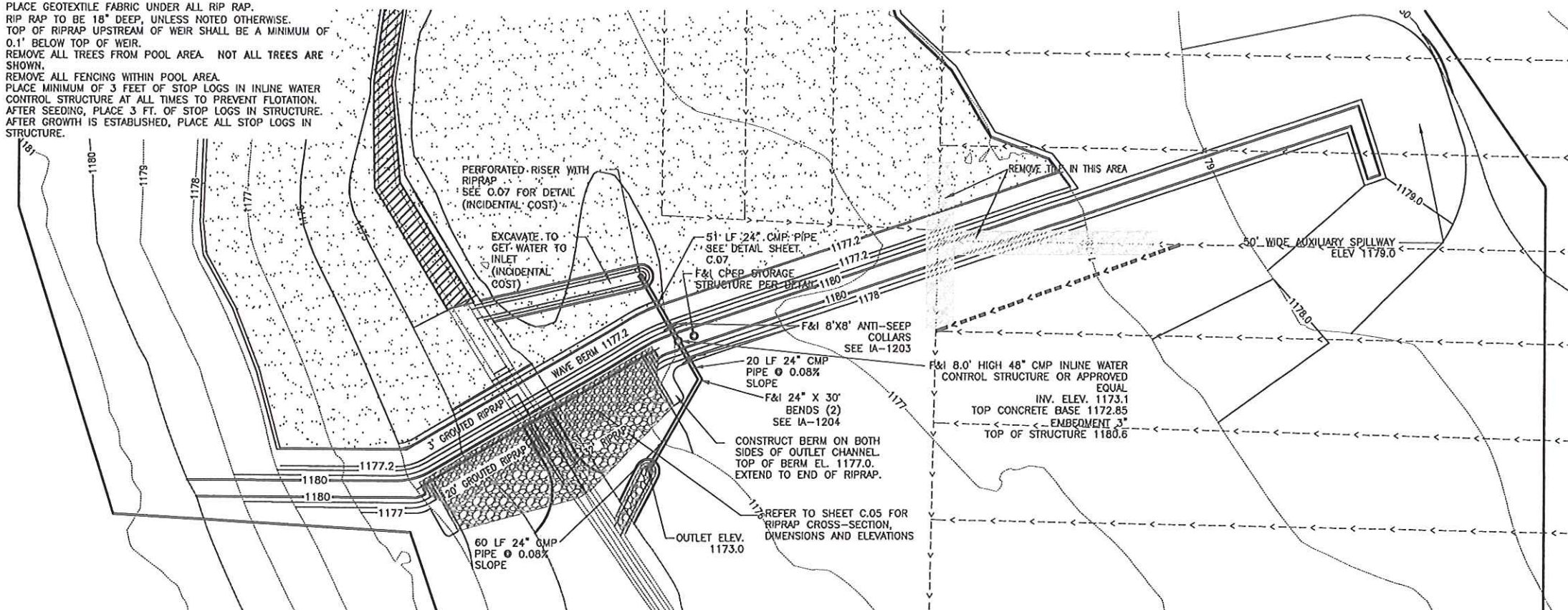
1. PLACE GEOTEXTILE FABRIC UNDER ALL RIP RAP.
2. RIP RAP TO BE 18" DEEP, UNLESS NOTED OTHERWISE.
3. TOP OF RIPRAP UPSTREAM OF WEIR SHALL BE A MINIMUM OF 0.1' BELOW TOP OF WEIR.
4. REMOVE ALL TREES FROM POOL AREA. NOT ALL TREES ARE SHOWN.
5. REMOVE ALL FENCING WITHIN POOL AREA.
6. PLACE MINIMUM OF 3 FEET OF STOP LOGS IN INLINE WATER CONTROL STRUCTURE AT ALL TIMES TO PREVENT FLOTATION.
7. AFTER SEEDING, PLACE 3 FT. OF STOP LOGS IN STRUCTURE.
8. AFTER GROWTH IS ESTABLISHED, PLACE ALL STOP LOGS IN STRUCTURE.



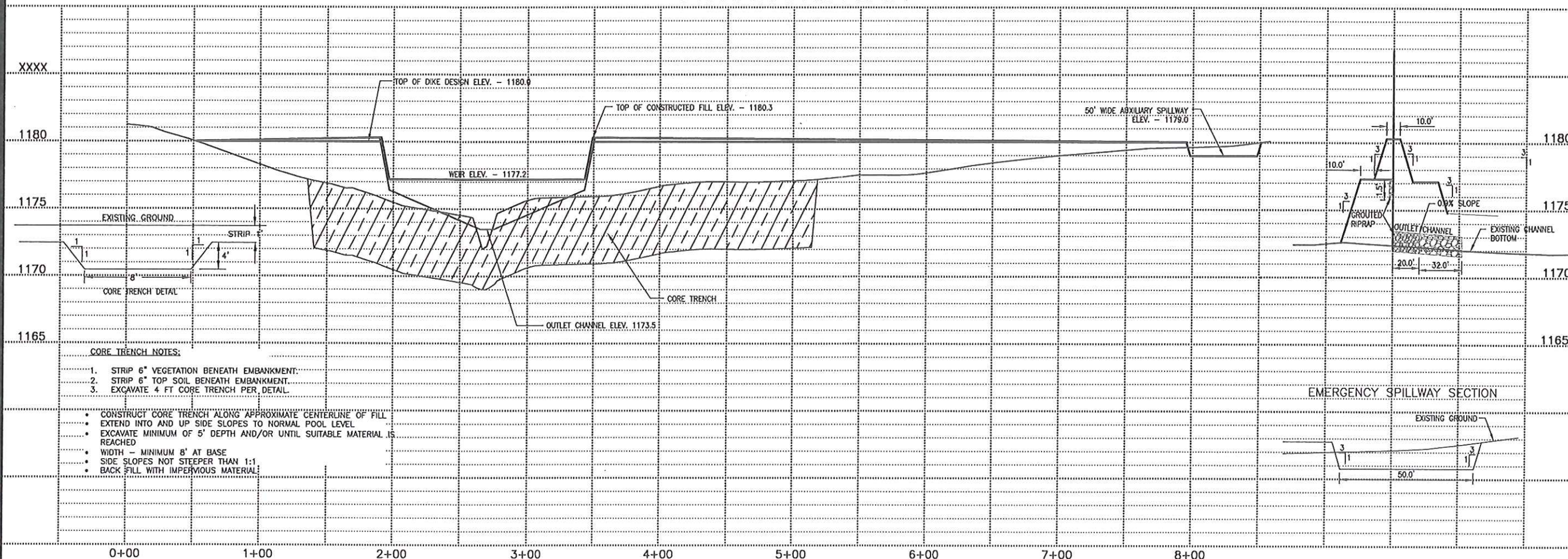
NOTE: FOR WATER TIGHT COUPLING BAND AND TANK LUG DETAILS SEE NRCS STANDARD DETAIL (IA-1220)

PIPE LENGTHS OF 24" CMP SHOWN ON PLANS DO NOT INCLUDE PIPE REQUIRED TO FABRICATE FIXTURES.

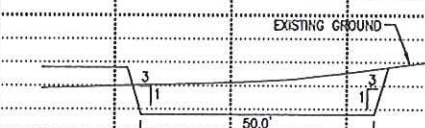
WATER CONTROL STRUCTURE FURNISH AND INSTALL INLINE WATER CONTROL STRUCTURE 48" DIA X 96" H. WITH POURED CONCRETE BASE. SEE IA-51 FOR SPECIAL SPECIFICATIONS. INSTALL PER MANUFACTURER RECOMMENDATIONS.



STRUCTURE PLAN



EMERGENCY SPILLWAY SECTION



CORE TRENCH NOTES:

1. STRIP 6" VEGETATION BENEATH EMBANKMENT.
 2. STRIP 6" TOP SOIL BENEATH EMBANKMENT.
 3. EXCAVATE 4 FT CORE TRENCH PER DETAIL.
- CONSTRUCT CORE TRENCH ALONG APPROXIMATE CENTERLINE OF FILL.
 - EXTEND INTO AND UP SIDE SLOPES TO NORMAL POOL LEVEL.
 - EXCAVATE MINIMUM OF 5' DEPTH AND/OR UNTIL SUITABLE MATERIAL IS REACHED.
 - WIDTH - MINIMUM 8' AT BASE
 - SIDE SLOPES NOT STEEPER THAN 1:1
 - BACK FILL WITH IMPERVIOUS MATERIAL

MITCHELL COUNTY CREP WETLAND SITE

SITE Mit981810C

STRUCTUR PLAN

PROJECT NUMBER 12114
COMPUTER FILE 12114DSUR.dwg

DATE 05/22/14

DRAWN BY ALH

CHECKED BY RGL

REVISIONS
#1 12-22-14

SHEET NUMBER

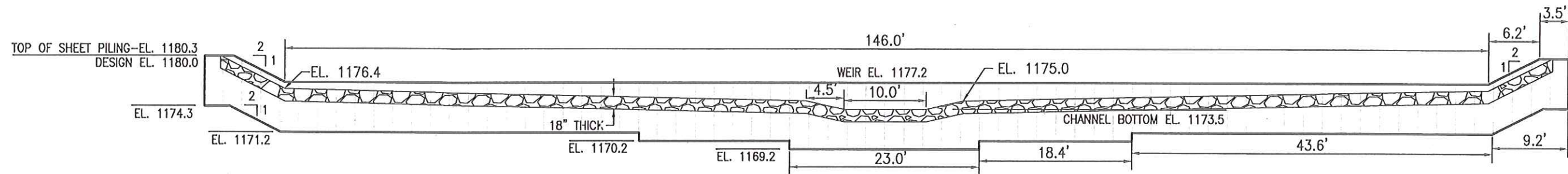
C.04

OF 7 SHEETS

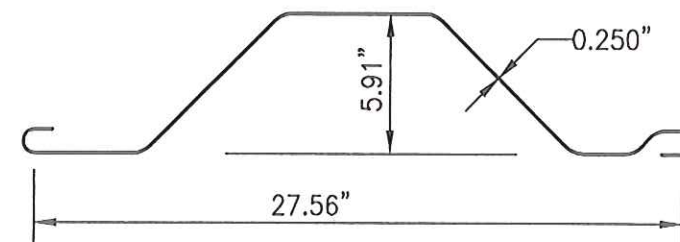


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SHEET PILE STRUCTURE



SHEET PILE CROSS-SECTION N.T.S.



DESIGN NOTES:

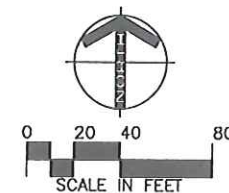
1. DESIGN SHEET PILE AREA = 1077 SF
2. SHEET PILE: MINIMUM SECTION MODULUS 8.05 CU. IN. PER FT. OF WALL
MINIMUM THICKNESS 0.25 IN.
MINIMUM STEEL GRADE 36 KSI
MEET ASTM A-328, A-572, OR A-690 MATERIAL SPECIFICATION
MINIMUM MOMENT OF INERTIA OF 54.6 INCHES **4 PER PILE
3. PILING TO BE INSTALLED STARTING FROM THE CENTER OF THE WIER
SECTION AND PROGRESSING AWAY FROM CENTERLINE.

MITCHELL COUNTY CREP WETLAND PROJECT

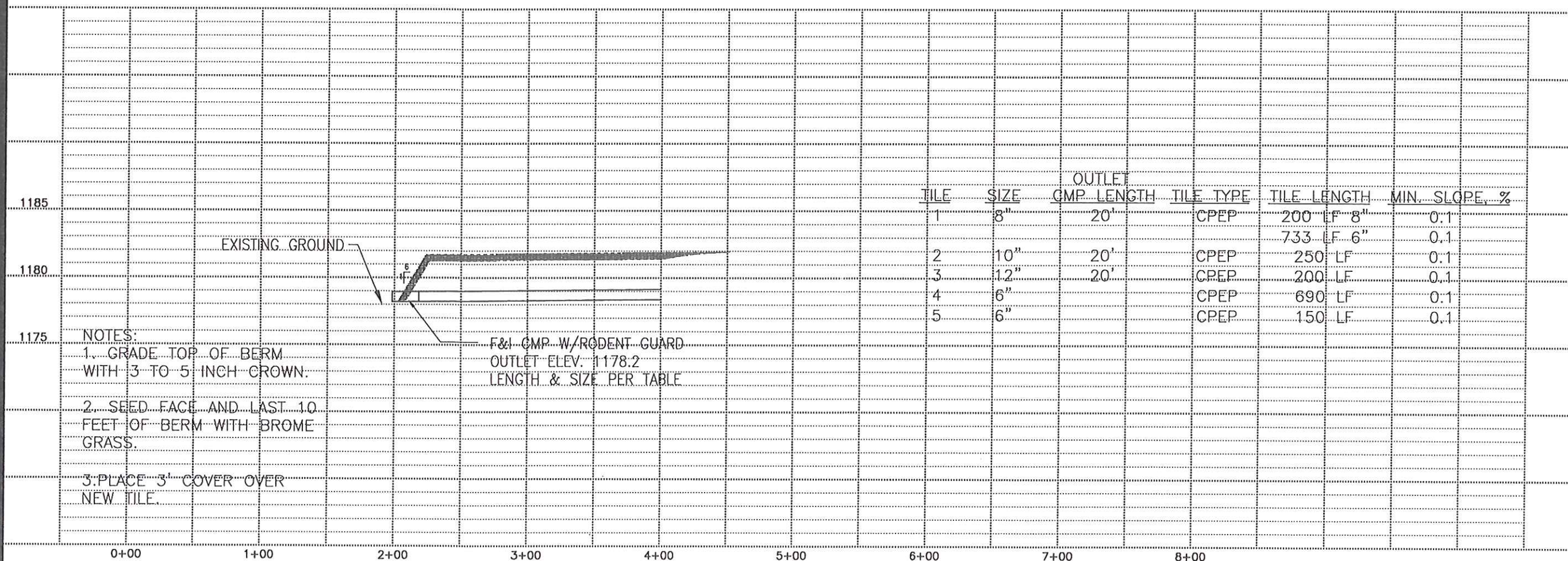
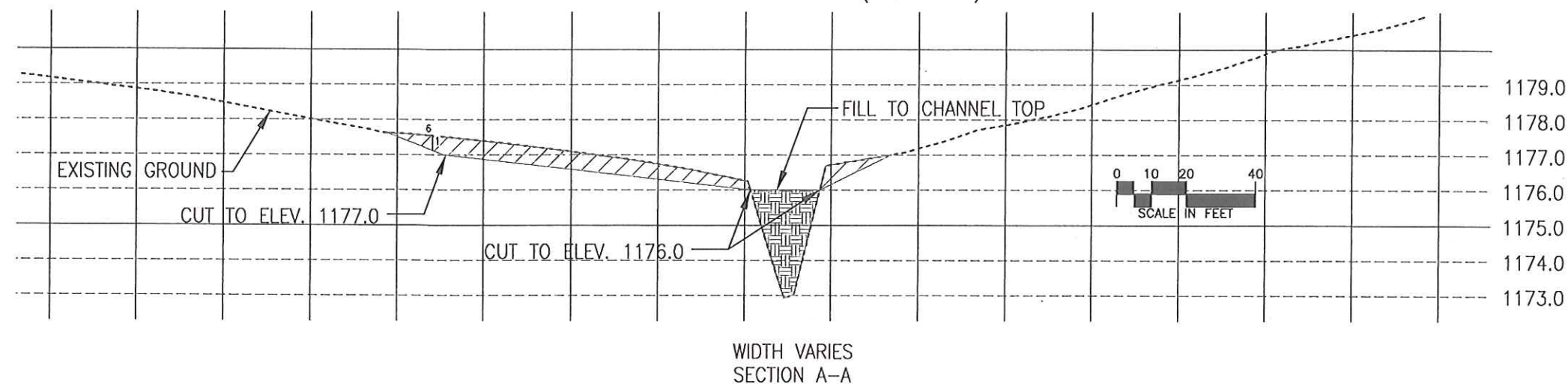
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MITCHELL COUNTY, IOWA

SHEET PILE STRUCTURE

PROJECT NUMBER	12114
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POOL CUT DETAIL - TYP. (SECTION 'A')



NOTES:
1. GRADE TOP OF BERM WITH 3 TO 5 INCH CROWN.

2. SEED FACE AND LAST 10 FEET OF BERM WITH BROME GRASS.

3. PLACE 3" COVER OVER NEW TILE.

F&I CMP W/ RODENT GUARD
OUTLET ELEV. 1178.2
LENGTH & SIZE PER TABLE

MITCHELL COUNTY CREP WETLAND SITE

SITE Mit981810C

DETAILS

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DATE 05/22/14

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CHECKED BY RGL

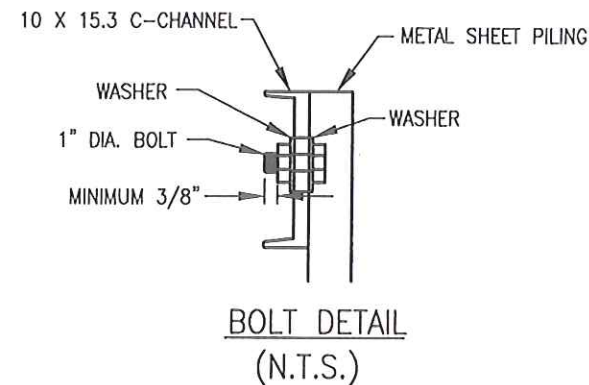
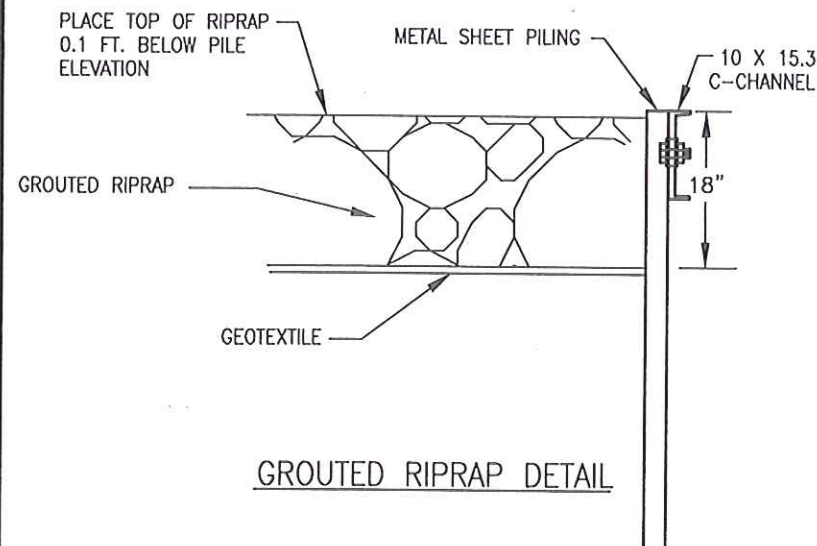
REVISIONS

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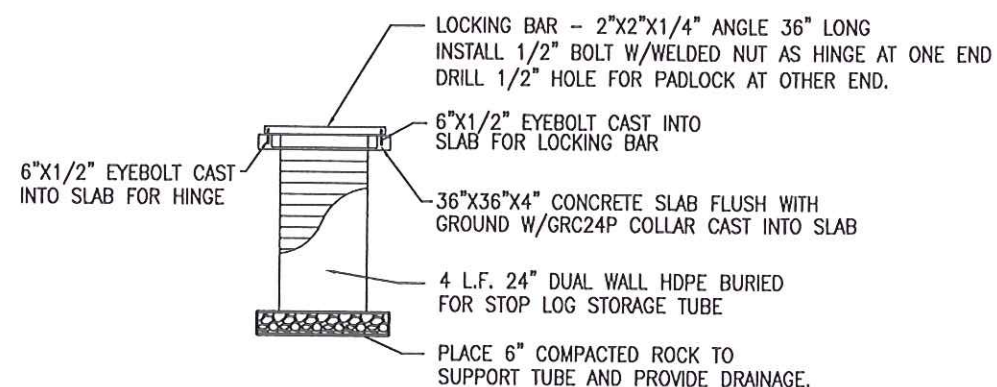
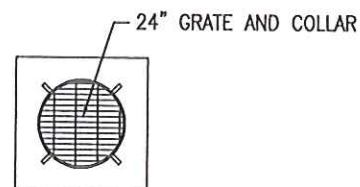
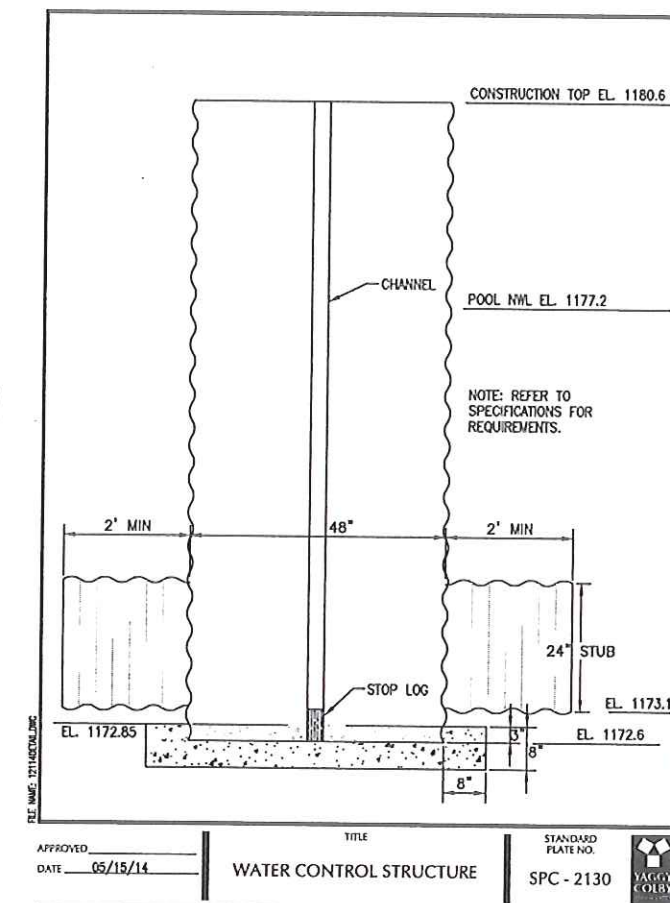
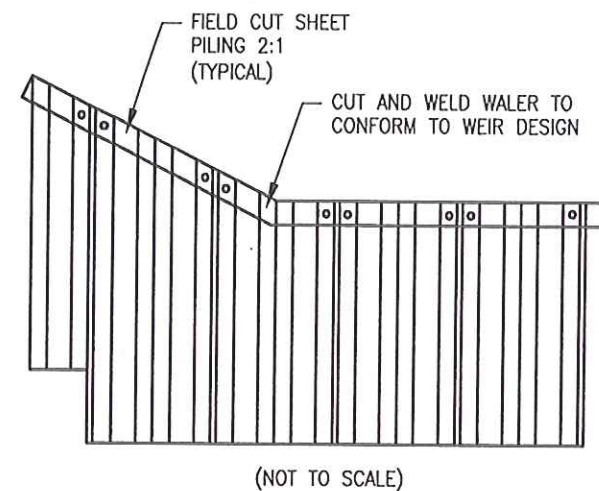
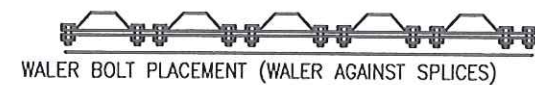
C.06

OF 7 SHEETS



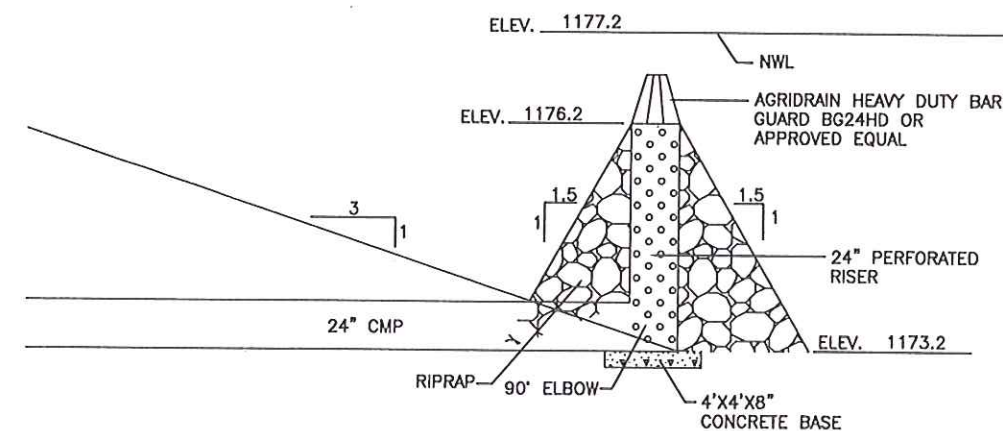
NOTES:

1. ALL BOLTS WILL BE 1" DIA. W/2 WASHERS. BOLT WILL EXTEND AT MINIMUM 3/8" BEYOND NUT.
2. ALL HOLES WILL BE FIELD DRILLED 1/16" DIA. LARGER THAN THE BOLTS.
3. 2 BOLTS WILL BE USED WHEN THE WALER IS PLACED NEXT TO THE SPLICE. 1 BOLT WILL BE USED WHEN THE WALER IS PLACED OPPOSITE THE SPLICE.
4. WALER SHALL BE PLACED ON THE DOWNSTREAM SIDE OF WEIR.



COVER/STOP LOG STORAGE STRUCTURE:

1. BOTH PADLOCKS FOR WATER CONTROL STRUCTURE(WCS) AND STOPLOG STORAGE TUBE SHALL BE KEYED ALIKE. FOUR OF KEYS ARE TO BE SUPPLIED UPON PROJECT COMPLETION.
2. PROVIDE 24" GRATE AND COLLAR (AGRIDRAIN GR24P GRATE AND GRC24P COLLAR OR APPROVED EQUAL) FOR STOP LOG STORAGE.
3. STOP LOG STORAGE IS TO BE PLACED ADJACENT TO WCS AND AT AN ELEVATION EQUAL TO OR HIGHER THAN THE WCS.



PERFORATED RISER DETAIL

1. PERFORATED RISER TO BE LOCATED AT TOE OF EMBANKMENT.
2. PERFORATIONS SHALL BE 3-IN. DIAMETER, 6" ± C-C VERTICAL & 12" ± HORIZONTALLY, WITH PERFORATIONS STAGGERED.
3. PERFORATIONS TO EXTEND FULL LENGTH OF RISER & ELBOW.
4. PERFORATED RISER, BASE AND BAR GUARD ARE INCIDENTAL COST SUBSIDIARY TO WATER CONTROL STRUCTURE.
5. NO GEOTEXTILE TO BE PLACED WITH RIPRAP.



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